

August 2001

# DEFENSE ACQUISITIONS

## Actions to Improve Navy SPAWAR Low- Rate Initial Production Decisions



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United States General Accounting Office  
Washington, DC 20548

August 7, 2001

The Honorable Gordon R. England  
The Secretary of the Navy

Dear Mr. Secretary:

During our review of the Navy's Space and Naval Warfare (SPAWAR) Systems Command's fiscal year 2001 budget request, we found that many information technology systems were being procured and fielded in relatively large quantities—sometimes exceeding 50 percent of the total—during low-rate initial production and before completing operational testing. The primary purpose of low-rate initial production is to produce enough units for operational testing and evaluation and to establish production capabilities to prepare for full-rate production. Limiting initial production affords the opportunity to confirm the stability and soundness of a new system before producing larger quantities. Commercial and Department of Defense (DOD) best practices have shown that completing a system's testing prior to producing significant quantities will substantially lower the risk of costly fixes and retrofits. For major weapons systems, there are statutory<sup>1</sup> provisions that limit the quantities of systems produced during low-rate initial production to the minimum quantity necessary and require justification for quantities exceeding 10 percent of total production. Although these provisions do not apply to non-major systems, DOD and Navy acquisition regulations encourage these programs to make use of the low-rate initial production concept where appropriate.

Given the risks associated with acquiring high percentages of production quantities before completing operational testing, we reviewed the acquisitions of information systems at SPAWAR to determine (1) why information systems were being procured and fielded in large numbers before operational testing, (2) what effects this practice was having on SPAWAR and the fleet, and (3) what the Navy is doing to mitigate the risks associated with this practice.

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<sup>1</sup> 10 U.S.C. 2400.

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## Results in Brief

According to SPAWAR officials, the main reason for the high percentage of low-rate initial production quantities is to more quickly respond to fleet demands for information systems improvements. The SPAWAR commander noted that the high percentage reflects the desire to quickly field information systems to keep up with rapid advances in technology. He further noted that the high percentage of low-rate initial production buys is generally considered low risk when they involve proven commercial technology and are low-cost items—compared to ships and aircraft. Officials in the Office of the Chief of Naval Operations said the fleet would rather have an information system with 75 to 80 percent capability than to wait until SPAWAR completes all necessary testing to ensure a system will meet all of its capability.

Many information technology systems purchased and fielded during low-rate initial production and prior to completing operational testing experienced problems that negatively impacted fleet operations and capabilities. We analyzed 8 of the 21 fielded SPAWAR programs with a high percentage of low-rate initial production quantities and found that all had performance problems, all had interoperability problems, and 6 had suitability problems. A limited analysis of the remaining 13 systems found that several also experienced operational problems. The SPAWAR commander said most of the problems we found were, in part, the result of an acquisition process that needed more discipline and has recently improved. He further noted that some operational problems with new systems are inevitable and are part of the cost of doing business and are worth the risk in order to provide systems to the fleet quickly. Nevertheless, the DOD Director of Operational Test and Evaluation said that low-rate initial items can be used in an operational environment to learn about problems and fix them, but procuring high percentages of a system before completing operational test and evaluation is a risky strategy.

SPAWAR has taken a number of steps to mitigate the risks of high percentage low-rate initial production procurements. To add more discipline and rigor to the low-rate initial production decision process, the Command now requires program managers to use a standardized checklist and report template as part of reviewing and approving low-rate initial production purchase requests. SPAWAR has also established an Acquisition Reform Office to serve as a focal point and command-wide disseminator of lessons learned and process improvements. The reform office is currently developing a “Rules of the Road” Acquisition Guidebook for SPAWAR program managers. Further, in discussions of our findings and observations during this review, the Navy and SPAWAR agreed to

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provide better risk management guidance for information systems. They also agreed to our suggested improvements in documenting, justifying, and reporting low-rate initial production decisions.

In commenting on our draft report, the Navy agreed and stated that the actions taken and planned by it and the SPAWAR Command are expected to improve the Navy's low-rate initial production decision process. The Navy's comments appear in appendix I.

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## Background

SPAWAR is one of the Navy's three major acquisition commands. SPAWAR provides information technology systems to naval forces on land, at sea, and in space and integrates all information products, including those developed by other systems commands and agencies outside the Navy. The SPAWAR workforce is over 7,300 personnel, and the fiscal year 2000 budget was \$3.7 billion—about \$2.7 billion to develop and procure systems and about \$1.0 billion to operate and maintain them. Specifically, SPAWAR develops, acquires, and manages

- battle management systems (for example, software applications and computers);
- undersea, terrestrial, and space sensors (for example, underwater sensors, navigation and weather systems, and satellites);
- information transfer systems (for example, communications systems, radios, antennas, and switches); and
- information management systems (for example, local area networks and routers).

As of October 2000, SPAWAR was managing 21 programs that involved low-rate initial production. These programs had cumulative low-rate initial procurements ranging from 5 to 100 percent of the total inventory objective—7 systems were above 50 percent. The estimated total production costs for the eight systems we analyzed in detail ranged from \$31 million to \$525 million.

As weapon system programs move through the phases of the acquisition process, they are subject to review at major decision points called milestones. Major defense acquisition programs, known as acquisition

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category I, and major systems programs, known as acquisition category II,<sup>2</sup> as well as non-major systems programs, known as acquisition category III and IV,<sup>3</sup> follow the same general process. DOD and Navy acquisition policies state that program risks shall be assessed at each milestone decision point before approval is granted for the next phase. The policies add that test and evaluation shall be used to determine system maturity and identify areas of technical risk.

Major milestones in DOD's systems acquisition process include

- Milestone 0, when the determination is made about whether an identified mission need warrants a study of alternative concepts to satisfy the need. If warranted, the program is approved to begin the concept exploration and definition phase.
- Milestone I, when the determination is made about whether a new acquisition program is warranted. If so, initial cost, schedule, and performance goals are established for the program, and authorization is given to start the demonstration and validation phase.
- Milestone II, when the determination is made about whether continuation of development, testing, and preparation for production is warranted. If so, authorization is given to start the engineering and manufacturing development phase. Approval of this phase will often involve a commitment to low-rate initial production, which is defined as the minimum quantity needed to (1) provide production-representative articles for operational testing and evaluation, (2) establish an initial production base, and (3) permit orderly ramp-up to full-rate production upon completion of operational testing and evaluation. Operational test and evaluation is a key internal control to ensure that decisionmakers have objective information available on a

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<sup>2</sup> The Navy defines acquisition category I as a major defense acquisition program that is estimated to cost more than \$355 million (fiscal year 1996 dollars) for research, development, testing, and evaluation or more than \$2.1 billion (fiscal year 1996 dollars) for procurement. The Navy defines acquisition category II as a major system program that is estimated to cost more than \$140 million (fiscal year 1996 dollars) for research, development, testing, and evaluation or more than \$645 million (fiscal year 1996 dollars) for procurement.

<sup>3</sup> The Navy defines acquisition category III as a weapon system program not designated acquisition category I or II and which affects the military characteristics of ships or aircraft or involves combat capability. The Navy defines acquisition category IV as those not designated as acquisition category I, II, or III.

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weapon system's performance to minimize risks of procuring costly and ineffective systems. Operational testing and evaluation uses field tests under realistic conditions to determine the operational effectiveness<sup>4</sup> and suitability<sup>5</sup> of a system for use in combat. DOD acquisition regulations generally provide that programs successfully complete these tests before starting full-rate production.

- Milestone III, when operational test and evaluation has been completed, a determination is made about whether to proceed to full-rate production and field the system.

Over the years, we have found instances in which DOD used the low-rate initial production decision phase to purchase significant numbers of major and non-major systems without successfully completing operational testing and evaluation. Often, these systems later experienced significant effectiveness and/or suitability problems. In 1994, we reported that DOD had made large buys of weapon systems during the low-rate initial production phase and prior to completion of operational test and evaluation, which resulted in operational problems.<sup>6</sup> For example, we reported that the Navy procured 100 percent of a system's inventory objective during low-rate initial production and later found that the system lacked critical hardware and software capabilities. In another case, the Navy procured 100 percent of a system's inventory objective during low-rate initial production and later terminated the program when it failed operational testing and evaluation. A recent Defense Science Board report found that weapons systems are still being fielded without adequate testing to assure their effectiveness and utility to operating units.<sup>7</sup> We conducted this review because buying systems before completing operational testing has inherent risks, and SPAWAR's practice of buying

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<sup>4</sup> DOD defines operational effectiveness as a system's overall degree of mission accomplishment when representative personnel use the system in its planned or expected operational environment considering organization, doctrine, tactics, survivability, vulnerability, and threat.

<sup>5</sup> DOD defines operational suitability as the degree to which a system can be satisfactorily placed in field use considering such factors as availability, compatibility, transportability, interoperability, reliability, wartime usage rates, maintainability, safety, and supportability.

<sup>6</sup> *Weapons Acquisition: Low-Rate Initial Production Used to Buy Weapon Systems Prematurely* (GAO/NSIAD-95-18, Nov. 24, 1994).

<sup>7</sup> Report of the Defense Science Board Task Force on Test and Evaluation Capabilities, Office of the Under Secretary of Defense for Acquisition and Technology, Dec. 2000.



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high percentages of a system's total inventory objective during low-rate initial production raised these risk concerns.

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## **Fleet Demands and Rapidly Advancing Technology Cited for the High Percentage of Low-Rate Initial Production Purchases**

SPAWAR officials cited three primary reasons for high-percentage buys during low-rate initial production. First, to meet Navy initiatives, SPAWAR must provide the fleet with large quantities of information technology systems as quickly as possible. Second, many information systems consist of evolving technology that quickly becomes obsolete. Third, additional low-rate initial production buys are approved due to delays in conducting the operational test and evaluation.

The main reason that SPAWAR officials cited for high-percentage buys during low-rate initial production is the need to provide as many information technology systems to the fleet as quickly as possible to meet several Navy initiatives. The Navy's current vision for the 21st century, *Forward From The Sea*, involves innovations in technology to rapidly transform the Navy into a 21st century force. SPAWAR provides or contributes to many of the operational capabilities that support the vision. Officials in the Chief of Naval Operations' Fleet and Allied Requirements Division stated that the fleets put pressure on SPAWAR to provide information systems faster. These officials, as well as SPAWAR officials, contend that if SPAWAR does not provide systems to the fleet quickly, then the fleet will bypass the Chief of Naval Operations and SPAWAR and procure some systems with fleet funding. If the fleet buys the systems, SPAWAR cannot control the configuration of these systems, which can eventually result in interoperability problems with systems that SPAWAR procures. An official in the Office of the Deputy Assistant Secretary of the Navy responsible for communications and space systems also agreed that there is pressure on SPAWAR to meet fleet demands. He said that the Under Secretary of Defense for Acquisition, Technology, and Logistics stated about 3 years ago that the pace of developing systems was too slow and called for shortening the development cycle by incorporating evolutionary development and acquisition. Through evolutionary development and acquisition, systems are continuously improved, as new technology becomes available.

According to the SPAWAR commander, another reason for quickly providing systems to the fleet is that information systems consist of rapidly advancing technology, which can become obsolete within 18 months. He said that procuring and fielding a large percentage of a system's inventory objective while still in low-rate initial production quickly provide the fleet with better information systems and provide important operational data so that any system performance problems can

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be quickly fixed. Officials in the Navy Fleet and Allied Requirements Division said that the 18-month obsolescence cycle is the main reason that the fleet would rather have a system now with 75 to 80 percent of its full capability as opposed to waiting until the system has all of its capability. However, officials in the Chief of Naval Operations' Office of Test, Evaluation, and Technology Requirements disputed that rapidly advancing technology is a legitimate reason for making high-percentage buys during low-rate initial production and before completing operational testing. These officials concluded that making high-percentage buys during low-rate initial production circumvents the operational testing and evaluation process and increases the risk that systems will not work as intended when fielded.

High-percentage buys during low-rate initial production also were the result of delays in conducting the operational test and evaluation. According to the SPAWAR commander, the pass or fail nature of operational testing contributed to delays. Rather than fail a test and risk program reduction or termination, operational tests were delayed until there was a good probability that the system would pass the tests. As tests were delayed, additional low-rate initial production buys were approved. Six of the eight systems we analyzed had additions to the original low-rate initial production quantities.

The SPAWAR commander said that making high-percentage buys of a system while still in low-rate initial production is low risk when proven commercial technology items are being procured and they are relatively low-cost items—when compared to the cost of ships and aircraft. Further, if problems arise after the low-rate initial production systems are fielded, the cost to fix them is not significant. However, SPAWAR officials agreed that none of the eight systems we analyzed are entirely commercial and that all of them have military requirements that must be tested in a realistic operational environment.

The DOD Director of Operational Test and Evaluation agreed that low-rate initial production items can be used in an operational environment to learn about problems and fix them, but he said that procuring large quantities of a system before operational test and evaluation is a risky strategy.



## Problems Experienced When Procuring High Percentages of Units In Low-Rate Initial Production

We analyzed eight SPAWAR systems and found seven of them had a combination of problems that adversely affected fleet operations—all had performance problems, all had interoperability problems, and six had suitability problems. A performance problem is the inability of a system to effectively and efficiently perform its assigned mission. An interoperability problem is the inability of systems to work together effectively to provide services to and accept services from other systems. A suitability problem involves a system not satisfactorily meeting one or more requirements, including reliability, maintainability, logistics support, or training. These problems may delay progress in achieving the Navy's vision for using information technology to attain and maintain network-centric warfighting knowledge and decision-making superiority. The last of the eight systems had not been installed when we analyzed the eight systems. Table 1 illustrates the types of problems identified for seven of the eight systems.

**Table 1: Types of Problems for High-Percentage Low-rate Initial Production Systems**

System		Current inventory objective	Percent low-rate production	Types of problems		
Name	Description			Performance	Interoperability	Suitability
Automated Digital Network System/ Sensitive Compartmented Information Automated Digital Network System	Provides communications network and selects best path for transmissions	513	51	X	X	X
Combat Direction Finding System	Detects, identifies, and provides long-range hostile target data	36	22	X	X	
Command and Control Processor	Provides interface for communications and shipboard processors	105	41	X	X	X
Commercial Wideband Satellite Program (Terminals)	Provides super-high frequency ship satellite communications	37	78	X	X	X
Digital Wideband Transmission System	Provides ultra-high frequency voice, video, and data communications	45	100	X	X	X
Miniaturized Demand Assigned Multiple Access	Provides capability to share multiple signals on a satellite broadcast	142	72	X	X	X
Navy Modular Automated Communications System II	Provides automatic processing and storage of messages	305	21	X	X	X
Submarine High Data Rate	Provides high capacity communications in extremely and super high frequencies	60	37	a	a	a

\* The first low-rate initial production unit had not been installed as of September 2000; therefore, no information existed about its operational effectiveness and suitability in the fleet.

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Two of the systems—the Digital Wideband Transmission System and the Command and Control Processor—illustrate how interoperability, performance, and suitability problems impact fleet operations. The Digital Wideband Transmission System is a radio transmission system supporting voice, video, and data communications. It is required on all aircraft carriers and amphibious ships and at training facilities. SPAWAR approved 100 percent of the total inventory objective to be bought under low-rate initial production; however, the system does not work due to a number of problems with the antenna, power amplifier, and radio frequency control. The system also created, and was affected by, electromagnetic interference, which caused severe interoperability problems. For example, the interference caused a complete loss of Global Positioning System navigation capability. Furthermore, in order for the digital system to work, an air-search radar had to be shut down. Consequently, the Navy turned off the system the first time it was used during an amphibious ready group deployment in the Pacific, replaced it with a legacy system, and placed the digital system in an inoperative status for 9 months. By November 2000, SPAWAR had installed 78 percent of the systems in the fleet, but it will cost \$4.3 million to fix the problems for this \$40-million program—\$1.2 million for engineering work and \$3.1 million for retrofit costs. SPAWAR is currently developing and testing improvements to system performance.

The Command and Control Processor acquires information from other communications systems, stores the information, and reformats it for use by the Aegis combat system on aircraft carriers and naval combat surface ships. Although SPAWAR originally approved a small purchase of the processor during the low-rate initial production, three subsequent low-rate initial production increases bought the total to 41 percent of the inventory objective. From 1995 to 2000, there were 263 problems noted with the system, mostly involving software, during battle group system integration tests. The processor has severe suitability problems because it breaks down unpredictably up to 12 hours at a time (due to software problems) and freezes up, which eliminates the system's capability to provide current situational awareness. Also, on an aircraft carrier that we visited, operators said that the processor would not integrate with other systems, even though it is designed to do so. To prevent the breakdowns, SPAWAR developed a workaround procedure, which involves resetting the system every 2 hours instead of every 24 hours. In addition, the breakdowns and workarounds put more pressure on operators and maintainers during combat or hostile situations.

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Some of SPAWAR's 13 other systems with a high percentage of low-rate initial production buys also had operational effectiveness and suitability problems. The Pacific Fleet experienced 46 problems with the Navy Extremely High Frequency Satellite Communications System from 1995 to 2000. The problems involved hardware and software, interoperability, and training. For example, in February 2000, system performance was degraded due to a part failure. In April 2000, SPAWAR reported that the problem had been solved. However, about a month later, the system had problems again, resulting in no response from the satellite and time-tracking errors being returned. The system was again placed in a degraded status and, as of August 2000, the problem was still unresolved. The Pacific Fleet also experienced problems with the High Frequency Radio Group, mainly due to system performance problems and training shortfalls. For example, on a ship visit in October 2000, ship communications personnel said that the system had broken down several times for a duration of 1 week to 1 month at a time. They said that, when it breaks down, the operators must tune in the radio frequency manually, but ship operators have not been trained to do this because they were used to relying on the system to tune into a particular frequency automatically. The Pacific Fleet also identified several other problems with the radio group, including a ship that experienced 15 failures of a system switch within 11 months.

The SPAWAR commander said that the Command did not have adequate controls and oversight, at the time of most of these low-rate initial production decisions, to either mitigate or manage risks associated with procuring and fielding large percentages of systems during low-rate initial production. He said the need for more discipline in the acquisition process contributed to the interoperability, performance, and suitability deficiencies we identified. He further noted, however, that some problems are part of the cost of doing business with new systems and are worth the risk to provide systems to the fleet quickly. According to the SPAWAR commander, the most meaningful measure of success is whether the systems are meeting their operational requirements, and he said that SPAWAR's systems are meeting theirs based on a performance parameter called operational availability.<sup>8</sup> However, according to the DOD Director of

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<sup>8</sup> Operational availability is calculated in two ways. For continuously operating systems, it is calculated by dividing the amount of time that the system is up and running by the cumulative amount of time that the system is up and running plus the down time. For on-demand systems, operational availability is calculated by dividing the number of times the system was available by the number of times the system was required to be available.

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Operational Test and Evaluation and the Chief of Naval Operations' Office of Test, Evaluation, and Technology Requirements, operational availability is only one of a number of key performance measures, and an overall assessment of system performance should not be based solely on that parameter.

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## Navy and SPAWAR Take Steps to Reduce Low-Rate Initial Production Risks

The Navy and SPAWAR have taken or plan to take a number of steps to mitigate the risks of large low-rate initial production procurements. To add more discipline and rigor to the low-rate initial production decision process, the Command now requires program managers to use a standardized checklist and report template as part of reviewing and approving low-rate initial production purchase requests. SPAWAR has also established an Acquisition Reform Office to serve as a focal point and command-wide disseminator of lessons learned and process improvements. The reform office is currently developing a "Rules of the Road" Acquisition Guidebook for SPAWAR program managers. Further, in discussions of our findings and observations during this review, the commander called for the development of risk management guidance for information systems and agreed to suggested improvements in documenting and justifying low-rate initial production decisions.

The SPAWAR commander said better risk management guidance would improve low-rate initial production decisions on information systems, especially when milestone decision authorities and program managers rotate in and out over time. The commander stated that he and the program managers primarily use their acquisition knowledge, wisdom, and experience when making risk management decisions.

In discussions with Navy and SPAWAR officials, we noted that the Acquisition Decision Memorandums,<sup>9</sup> used to document and support milestone decisions, did not always include the low-rate initial production quantity being approved, the cumulative number of low-rate initial production items that had been approved, or the cumulative low-rate initial production percentage. We also noted that, at SPAWAR, the justification for approving low-rate initial production purchases was not always documented. The Navy and SPAWAR officials agreed to document

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<sup>9</sup> The Acquisition Decision Memorandum is a memorandum signed by the milestone decision authority that documents decisions made as a result of a milestone decision review or an in-process review. DOD Instruction 5000.2 and Navy Instruction 5000.2B require a decision memorandum for all acquisition milestones for major and non-major programs but do not specify format or content.

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in the Acquisition Decision Memorandum the justification for all low-rate initial production approvals, as well as the current inventory objective and the cumulative number of units bought under low-rate initial production. SPAWAR also agreed to include in its quarterly program status report when cumulative low-rate initial production approvals reach 50 percent or more of the current inventory objective. Recognizing that other Navy activities can benefit from the low-rate initial production decision checklist and report template, we recommended that this guidance be distributed throughout the Navy. The Navy subsequently distributed the guidance DOD-wide. Finally, the Navy and SPAWAR agreed to supplement acquisition training for program managers and staff by incorporating risk management tools into existing courses.

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## Conclusions

In seeking to provide new information systems to the fleet as quickly as possible, SPAWAR officials procured and fielded relatively large quantities of systems during low-rate initial production and before completing operational testing. Our subsequent review of seven of these systems found that six had experienced operational problems that negatively impacted the fleet. The SPAWAR commander noted that controls and oversight, at the time of most of these decisions, were not adequate to either mitigate or manage risks associated with procuring and fielding large percentages of systems during low-rate initial production. He said the need for more discipline in the acquisition process contributed to deficiencies we identified. Since that time, Navy and SPAWAR officials have taken or have plans to take a number of steps to mitigate the risks of large low-rate initial production procurements. In addition, they have agreed to implement, and in one case have already implemented, process improvements we suggested during the course of this review. Given these actions, we are not making any recommendations in this report.

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## Agency Comments

In commenting on our draft report, the Navy agreed and stated that the actions taken and planned by it and the SPAWAR Command are expected to improve the Navy's low-rate initial production decision process. The Navy's comments appear in appendix I.

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## Scope and Methodology

To acquire information about the number and status of SPAWAR low-rate initial production programs, we interviewed officials and obtained documentation from the SPAWAR Acquisition Reform Office; selected SPAWAR program offices; the Office of the Assistant Secretary of the Navy (Research, Development, and Acquisition); the Office of the Deputy Assistant Secretary of the Navy (Command, Control, Communications, Computers, and Information/Electronic Warfare/Space); the Office of the Deputy Director Defense Procurement Strategies; the Office of the Under

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Secretary of Defense (Acquisition and Technology); and the Office of the Chief of Naval Operations.

To obtain detailed information about the impact of the high percentage of SPAWAR low-rate initial production procurements, we selected and reviewed 14 programs, representing 70 percent of all SPAWAR low-rate initial production programs. Of these 14 programs, we examined 8 programs in detail looking at operational, logistic, interoperability, and training issues to determine how well these programs were performing.

To obtain information about the operational testing, evaluation, interoperability, and fielding of low-rate initial production systems, we interviewed officials and obtained documentation from the Office of the Director of Navy Test, Evaluation, and Technology Requirements; the Office of the Navy Commander Operational Testing and Evaluation Force; the Office of the Program Manager for Battle Group Systems Integration Testing; and the Office of the Director of Operational Test and Evaluation, Office of the Assistant Secretary of Defense.

To obtain information about the operation, performance, interoperability, maintenance, repair, retrofit, suitability, and training regarding low-rate initial production systems in the fleet, we visited the Naval Surface Force Command, Pacific; the Naval Air Command, Pacific; and the Naval Submarine Command, Pacific, Squadron Eleven. We also visited specific ships in each command, including the U.S.S. *Benfold* (DDG-65), the U.S.S. *Pearl Harbor* (LSD-52), the U.S.S. *John C. Stennis* (CVN-74), and the U.S.S. *Salt Lake City* (SSN-716). In addition, we held discussions with SPAWAR program officials and officials from SPAWAR's In-Service Engineering Activity, Fleet Support Engineering Team, and Installations and Logistics Directorate.

To obtain information about the laws, regulations, procedures, and guidance governing the procurement of information technology systems in low-rate initial production, we interviewed officials and obtained documentation from the Office of the Commander, Space and Naval Warfare Systems Command; the Office of the Chairman Deskbook Working Group (DOD 5000 Rewrite); the Assistant Secretary of the Navy (Research, Development and Acquisition); and the Office of the Assistant Deputy Under Secretary of Defense (Systems Acquisition). We also reviewed selected laws and regulations governing low-rate initial production, including title 10 of the U.S. Code, the DOD 5000 series acquisition regulations (the 1996 and revised 2000 version), and Secretary



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of the Navy Instruction 5000-2B governing acquisition and procurement of low-rate initial production and commercial-off-the-shelf technology.

We conducted our review from June 2000 through May 2001 in accordance with generally accepted government auditing standards.

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We are sending copies of this report to interested congressional committees; the Honorable Donald H. Rumsfeld, Secretary of Defense; and the Honorable Mitchell E. Daniels Jr., Director of the Office of Management and Budget. Copies will be made available to others upon request.

Please contact me at (202) 512-4821 if you have any questions regarding this report. Key contributors to this report were Cristina Chaplain, Joe Dewechter, Dorian Dunbar, Stephanie May, Gary Middleton, Sarah Prehoda, Richard Price, and William Woods.

Sincerely yours,

A handwritten signature in black ink that reads "James F. Wiggins". The signature is written in a cursive, flowing style.

James F. Wiggins  
Director  
Acquisition and Sourcing Management

# Appendix I: Comments From the Department of the Navy



DEPARTMENT OF THE NAVY  
OFFICE OF THE ASSISTANT SECRETARY  
RESEARCH, DEVELOPMENT AND ACQUISITION  
1000 NAVY PENTAGON  
WASHINGTON DC 20350-1000

JUL 23 2001

23 July 2001

Mr. James F. Wiggins  
Director  
Acquisition and Sourcing Management  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Wiggins:

This is the Department of Navy response to the General Accounting Office (GAO) draft report, "DEFENSE ACQUISITIONS: Actions to Improve Navy SPAWAR Low-Rate Initial Production Decisions" dated June 14, 2001 (GAO Code 707533/OSD Case 4019).

The Navy concurs with the GAO report. Changes to procedures agreed to by the GAO and the Navy during the course of the audit are expected to improve the Navy's Low Rate Initial Production decision process.

A summary of the agreed upon changes to procedures and an emphasis on training are enclosed.

Sincerely,

A handwritten signature in dark ink, appearing to read "Paul A. Schneider".

Paul A. Schneider  
Principal Deputy

Enclosure

Enclosure

Department of Defense Response to General Accounting Office  
Draft Report:  
DEFENSE ACQUISITIONS: Actions to Improve Navy SPAWAR Low-Rate  
Initial Production Decisions

This is a summary of the agreed-upon changes that will improve the LRIP performance of fielded systems at less cost or disruption to fleet operations:

1) Acquisition Decision Memoranda

The Navy agreed to require that all program Acquisition Decision Memoranda - major and non-major - include the justification for the LRIP decision, together with cumulative units approved and the percent LRIP represents to the total inventory objective.

2) Operations and Maintenance Training

The Navy agreed to better define O&M training responsibilities between the program manager and the fleet for systems fielded during LRIP when they will exceed ten percent of the expected production quantity.

3) Risk Management (and Earned Value) Guidance

The Navy recognizes the need to reinforce risk management training that our program managers and program management staff receive as part of their program management certification training through the Defense Acquisition University's Defense Systems Management College. ASN(RDA) will remind senior acquisition officials of the tools available to help identify risks and to develop mitigation measures at the Navy Acquisition Reform Senior Oversight Council (NARSOC) meeting scheduled for the second quarter of fiscal year 2002. In the meantime, risk management issues will be incorporated into Information Alerts, which are periodic bulletins from the Department of the Navy Acquisition Reform Executive and are provided directly to acquisition workforce members. These Info Alerts will address the use of independent technology readiness assessments, independent expert reviews of software intensive programs, and earned value management, as well as risk management measures.

4) Independent Technology Readiness Assessment

Regarding independent technology readiness assessments and independent expert review of ACAT programs, the Navy will continue to meet the requirements of DODI 5000.2, paragraph 4.7.3.2.3.1.2, and DOD Regulation 5000-2R, paragraphs C2.6.8 and C7.5.3, to employ independent reviews. The Department of the Navy Science and Technology Executive (Department of the Navy Chief Technology Officer) will oversee these assessments and reviews.

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Washington, D.C. 20548-0001

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Defense Technical Information  
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Fort Belvoir VA 22060-6218